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FOOD NEWS

FOR CONSUMERS

Volume 10 Number 3 Summer Supplement 1993

United States Department of Agriculture
Food Safety and Inspection Service

STOP BACTERIA

COLD

***E. COLI* CONTROL**
& **WARM WEATHER**
FOOD CARE

FOOD NEWS

Summer Supplement 1993
Vol. 10, No. 3

Food News for Consumers is published by USDA's Food Safety and Inspection Service, the agency charged with ensuring the safety, wholesomeness and proper labeling of the nation's meat and poultry supply. The magazine reports how FSIS acts to protect public safety, covering research findings and regulatory efforts important in understanding how the agency works and how consumers can protect themselves against foodborne illness.

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Safe Food for Summer— the Consumer's Job Begins at Home

*A Message from Eugene Branstool,
USDA Assistant Secretary for Marketing
and Inspection Services*

I am pleased to introduce myself to *Food News* readers with a few words about the importance of this issue on how consumers can protect themselves from foodborne illness.

Naturally, foodborne illness prevention is a major concern at USDA these days. Secretary Espy has made it a personal priority as a result of the serious *E. coli* outbreak in the western states which occurred just after he took office in January.

The nation's consumers are concerned too. People have let us know through *hundreds* of calls to our Meat and Poultry Hotline that they have questions which need to be answered.

So this issue contains a 4-page section devoted to what consumers want to know about the rare, but dangerous organism known as *E. coli* O157:H7. We're updating readers on the cryptosporidium parasite which invaded Wisconsin water supplies and on the recent cutting board controversy (wood or plastic?). Plus, we've updated the popular "Summer Basics" page on everyday safe food handling tips.

As an enthusiastic new member of the USDA Team, I am pleased to be part of USDA's ongoing efforts to give consumers the information they need to take safe care of their food. Here's hoping that you and your family are enjoying a safe and happy summer.



C. Eugene Branstool, USDA's new Assistant Secretary for Marketing and Inspection Services, is both a farmer and a 16-year veteran of the Ohio state legislature. He has also been honored for his work for the improvement of public education. As head of Marketing and Inspection Services, he oversees the Food Safety and Inspection Service which handles meat and poultry inspection.

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Answering Your Questions on *E. coli*

The Meat and Poultry Hotline has received hundreds of calls from consumers about the *E. coli* O157:H7 organism and how to avoid it at home. Here are some of the most-often-asked questions the Hotline has received since the outbreak made headlines earlier this year.

Q To what internal temperature should ground beef be cooked to destroy *E. coli*?

A Cook the ground beef to at least 160° F. If possible, use a meat thermometer to check that it's cooked all the way through. Otherwise, check visually—red meat is done when it's brown or gray inside. Juices should run clear with no traces of pink.

Q Is it more risky to eat a rare hamburger than a rare steak or roast?

A Yes. Undercooked hamburger is more risky because of the kind of handling and preparation hamburger receives. Surface bacteria may be spread throughout the meat during grinding. Also, ground meat is often made with trimmings from several cuts. But this does not mean that we recommend eating other cuts raw or rare either. You should cook ALL meat, poultry and fish to at least 160° F.

Q What are the symptoms of *E. coli* food poisoning?

A Symptoms include severe abdominal cramps, followed by watery diarrhea that often becomes bloody. Victims may also suffer vomiting and nausea, accompanied by low-grade fever. In some persons, particularly children and the elderly, the infection can lead to severe complications, including kidney failure.

Q How do you prevent illness from this serious form of *E. coli*?

A Thorough cooking destroys the *E. coli* bacteria. In addition, you should follow these general safe food handling tips:

- After shopping, quickly freeze or refrigerate all perishable foods.
- Never thaw food on the counter or let it sit out of the refrigerator for more than 2 hours. Food should not be off refrigeration over 1 hour in high summer heat (85° F and above).
- Use refrigerated ground meat and patties in 1-2 days; frozen meat and patties in 3-4 months.
- Wash hands, utensils and work areas with hot soapy water after contact with raw meat and meat patties, to avoid cross-contamination. Follow good personal hygiene rules, especially after using the bathroom.
- Cook hamburgers, other meat patties, meat loaf, meat balls (or any dish made with ground meat) until gray or brown inside, or to an internal temperature of 160° F.
- Serve food with clean plates and utensils.

Q How can I tell if the ground beef I buy is safe to eat?

A You can't just by looking at it or smelling it. That's why you should always follow the rules mentioned above. If an off-odor is apparent, return it to the store.

Q Is *E. coli* a problem only with beef?

A No. *E. coli* can appear in raw milk, so only use pasteurized product. Unprocessed apple cider and unchlorinated water can carry the bacteria. And other foods can "pick up" the bacteria from raw meat juices—for

example if salad vegetables were chopped on the same cutting board where you had just tenderized steak.

Q What should I do when eating out in a restaurant or fast food establishment?

A Send back any meat, poultry or fish product that does not appear thoroughly cooked. Ground meat should be gray or brown in the center. Poultry juices should run clear and fish should "flake" with a fork. All cooked food should be served hot.

Q Does freezing kill *E. coli*?

A No! That's why it's important to cook all food thoroughly.

Q What is USDA doing about the *E. coli* problem?

A USDA has embarked on a number of new initiatives at the farm, meat plant, supermarket and consumer level in order to protect the public. For example, USDA is sponsoring research aimed at keeping food animals from harboring the O157 bacteria in their systems, which includes efforts to develop a vaccine against the illness. We are working on improved detection methods to keep the bacteria out of meat plants. We are instituting more stringent time and temperature controls in meat processing plants like those that produce hamburger. We are working closely with state and local public health agencies to increase their effectiveness in avoiding and containing outbreaks, and we will soon require that all raw and partially-cooked meat and poultry products have safe handling instructions on the package. These safe handling directions will cover proper cooling and cooking.

—Herb Gantz

E. coli O157:H7

At a Glance

The bacteria *E. coli* O157:H7, also known just as O157, is a rare but dangerous type of *E. coli*. It lives in the intestinal tracts of mammals and man. Some cattle carry the bacteria. It can be transferred from animal to animal, animal to man, from animal to man on food and from person to person through close contact or food. NOTE: O157 can survive refrigeration and freezer storage. If present, it can multiply slowly even at 44° F. Thorough cooking to 160° F is the best safeguard against infection.

Food sources. Undercooked hamburger and roast beef, raw milk, improperly processed cider, contaminated water and mayonnaise and vegetables grown in cow manure have caused outbreaks in this country over the last 10 years. Samples from retail stores have also shown the organism to be present on lamb, pork and poultry samples but no illness has been traced to these foods.

Outbreaks. Since 1982, when O157 was first shown to cause foodborne illness, there have been at least 16 major outbreaks in the United States. Some 22 deaths have been recorded. CDC experts estimate there may be as many as 20,000 cases a year.

Testing for O157. USDA's Food Safety and Inspection Service and Agricultural Research Service are working with a number of private research and university groups to develop faster, more accurate testing for this bacteria in meat plants and on food products. Several commercial lab screening tests are currently in evaluation. If approved,



these new tests will cut days off the lab tests now available. However, screening tests do not tell for certain whether the bacteria is present, and a true on-site quick test is still very much in the future.

The illness. O157 is dangerous. It appears that just a few of these bacteria can make you sick. After an incubation period of 4-9 days, the disease normally lasts 4-10 days. Patients may suffer bloody diarrhea, cramps and low-grade fevers.

Complications. Young children, the elderly and infirm may develop complications. Children may develop HUS (hemolytic uremic syndrome) which can cause kidney failure, brain damage, strokes and seizures. A similar problem, TTP (thrombotic thrombocytopenic purpura), can cause strokes, a side-effect often seen in the elderly.

Protect Yourself.

- Generally, if you cook meat, poultry and fish to 160° F—until all

pink is gone—you can avoid problems with O157.

- Return any undercooked food at a restaurant for further cooking.
- Don't drink raw milk. Use only safe, treated water.
- Wash all fruits and vegetables before eating.
- While most fresh cider on the market today is probably safe, you may want to take extra precautions if your family includes at-risk persons like the very young, the elderly or people with immune system problems. In that event, buy pasteurized cider OR heat it to 160° F (a slow simmer where steam is starting to rise from the pan) before serving or refrigerating.

Hard cider? Cider you find in a liquor store is pasteurized. Hard cider from a roadside stand could constitute a slight risk to at-risk persons. ❖

E. coli O157:H7— Asking Researchers About Their Latest Findings

by Mary Ann Parmley



Rod-shaped
E. coli cell

Since the January outbreaks on the West Coast this year, the Department of Agriculture has devoted considerable research effort to learning more about *E. coli* O157:H7 bacteria—how it operates and how it spreads from animal species to man.

FOOD NEWS: What you read about the toxins or poisons O157 bacteria form is quite confusing. What do we know for sure? Dr. Bonnie Rose, a microbiologist at USDA's Food Safety and Inspection Service's Beltsville, Md. lab, says researchers have really just started to look at toxin formation in O157 infections. Toxins formed by the bacteria in the victim's body appear to cause some of the more severe side-effects such as kidney failure and stroke.

"To date," said Dr. Rose, "we've isolated three toxins—SLT I, SLT II and an SLT II variant." SLT stands for Shiga-like toxin so-named because these toxins resemble the Shiga toxin which causes certain forms of shigellosis, another foodborne illness.

Dr. Nancy Strockbine, a CDC (Centers for Disease Control and Prevention) microbiologist specializing in foodborne diarrheal diseases, says researchers are still trying to pinpoint exactly which strains of *E. coli* cause hemorrhagic problems (blood in the stool).

"O157 may not be the only strain that causes serious hemorrhagic illness," said Dr. Strockbine. "Other *E. coli* strains also have some of the same potential disease-producing traits present in O157.

"These traits are the production of Shiga-like toxins, the presence of a gene for very close attachment of the bac-

terium to the intestine and the presence of a certain plasmid in the 60 mega-Dalton range."

A plasmid is a piece of DNA, genetic material, within the bacterial cell. Mega-Daltons are measures of molecular mass (see drawing).

FOOD NEWS: The new rapid lab tests can cut the identification time on O157 from about 72 to 36 hours, but there are still no on-site quick tests that give immediate results. Why? Dr. Peter Feng, the FDA microbiologist who has developed a DNA probe to identify O157:H7, sighed heavily as he explained, "The bottom line is that today's technology isn't sensitive enough for us to develop true quick tests. O157:H7 makes people sick at low numbers. But it's tough to identify low numbers of bacteria cells in food. Food is a complex material—you've got fats, oils and maybe millions of harmless bacteria. So, to find the few *E. coli* O157:H7 cells that might be there, we have to 'enrich' the sample by putting it in a growth medium for hours or days. The O157:H7 cells have to multiply to at least 10,000 for present tests to 'see' them. Until more sensitive technology is available, the enrichment process will continue to slow us down."

FOOD NEWS: Hamburger was the chief cause of illness in the recent O157 outbreaks. Who is looking at how cattle are raised and fed? What about vaccinating them against this disease? USDA-sponsored research is going on in both areas. In February, USDA Secretary Mike Espy asked Dr. Michael Doyle, a respected *E. coli* researcher at the University of Georgia, to start work on a cattle vaccine. Dr. Doyle, head of the Center for Food

Safety and Quality Enhancement at Griffin, Ga., has isolated a special protein from the O157 bacteria. This protein is part of the outer surface layer of the bacteria and may cause an infected animal to produce antibodies to protect itself. Triggering the development of protective antibodies is what a vaccine does. So, by refining the O157 protein for use in a vaccine or by inserting this protein into a harmless *E. coli* cell, Doyle feels he can develop an effective vaccine. How long will it take? "Trying to move this to completion in three to four years may be pushing it," Doyle said, "but we're certainly going to try."

Meanwhile back at the experimental farm, Dr. Harley Moon, director of USDA's National Animal Disease Center, Ames, Iowa, is overseeing research on why dairy cattle seem particularly susceptible to O157 infection.

"We're going to be looking at this in three phases," said Dr. Moon. "First looking at calves, then adult cattle, we're trying to see if these animals offer a physiologically more attractive environment for O157. Later we'll extend the work to pigs.

"And, from another standpoint, what corrective or preventive action could producers take, we're looking at how O157 reacts to animal feeding schedules. It appears now, for example, that it might be wise to keep cattle on full feed for a longer period before slaughter to sustain natural protection against this bacteria." For the technically adept, project leader Dr. Mark Rasmussen and his colleagues have found that volatile fatty acids and normal pH levels in the rumen (stomach) and intestine protect cattle against O157 infection. Full feeding helps keep both these factors at normal levels. ✚

Foodborne Pathogens— New Controls from Farm to Table

by Pat Moriarty, R.D.*

USDA HAS DECLARED “WAR ON PATHOGENS.” It’s a new kind of war using technology to reduce and control pathogens (organisms like bacteria, viruses and parasites that cause foodborne illness) on meat and poultry products. While ensuring the safety of our meat and poultry supply has always been the central thrust of USDA’S Food Safety and Inspection Service (FSIS), this new effort will bring the most up-to-date scientific methods to the fight.

Controlling pathogens is far from easy. Why? Because they are everywhere in nature. They are not visible to the human eye. You can only see them under a microscope. And for the most part, you cannot smell or taste them. So, while a raw meat or poultry product may look fine, it almost certainly carries some pathogens. How many and which types of bacteria or other pathogens are on the meat is affected by how the animal was raised, conditions at slaughter, handling at the supermarket and handling and cooking in the home.

USDA’s pathogen reduction program will strengthen federal efforts to decrease the likelihood harmful pathogens like salmonella, listeria or *E. coli* O157:H7 will enter the food supply. To that end, comprehensive efforts are being made at the farm, slaughter

plant, processing plant, supermarket and food service level. Consumer education efforts on how to handle food at home are also being enhanced.

Here is a sampling of how USDA plans to improve the current inspection system:

“I want to see tough new safety standards, and I expect to see them enforced.”

Secretary of Agriculture
Mike Espy, Press Statement
May 27, 1993

At the FARM, USDA will research why some animals harbor harmful bacteria in their systems while on the farm. Often these pathogens that can make people sick do not noticeably affect the animals’ health, so the farmer or rancher doesn’t know which animals are affected.

At the SLAUGHTER PLANT, USDA will develop new methods to detect and reduce bacteria on meat and equipment. This includes finding new quick tests for the detection of bacteria and new ways to safely destroy pathogens.

At both SLAUGHTER AND PROCESSING PLANTS, USDA will require industry to institute detailed, step-by-step plans to reduce the risk of pathogen contamination at every critical stage of production. For example, we have just passed a new rule requiring producers of cooked meat patties to meet stringent time and temperature controls in cooking and cooling the products.

For FOODSERVICE AND RETAIL ACTIVITIES, USDA will provide the most current food safety information to state enforcement agencies and food handlers through technical and resource assistance, teleconferences and the development of educational materials. We’ll be working cooperatively with FDA, the USDA Extension Service and trade and professional organizations in this endeavor.

For CONSUMERS, USDA will require companies to put “Safe Handling Labels” on meat and poultry products. The labels will explain how to properly handle, cook and store these products. USDA is also planning a national consumer awareness campaign on safe food handling practices.

In short, USDA is preparing to enter the 21st century with a meat and poultry inspection system that will better protect the public from a wide range of pathogen problems. ♦

* Registered Dietitian

Summer Outings

THE FOOD CARE BASICS

IN THE KITCHEN

- Clean preparation is essential.
- Wash hands, work area and utensils before preparing food.
- Don't thaw on the counter.
- Marinate food in the refrigerator.

MENU PLANNING

- Plan to take only the amounts of food you'll use.
- With an insulated cooler and ice, most foods are safe for short periods.
- Salads with store-bought mayonnaise can be safe, if kept cold. Avoid custard-like foods.
- If a cooler is not an option, take fruits, fresh vegetables, hard cheese, canned or dried meats or fish, peanut butter, breads, crackers, dry cereal.

PACKING IT UP

- Always use an insulated cooler.
- Include a cold source in the cooler. Use block ice, frozen gel packs or frozen water or juice in plastic or paper containers.
- Start with cold food—pack directly from the refrigerator or freezer and pack in reverse-use order. First foods packed are last to be used.
- Securely overwrap or bag foods that may drip or leak, particularly raw meat, poultry and fish. This will prevent raw juices from touching ready-to-eat foods.
- Have one cooler for food, another for beverages and extra ice.
- Plan to keep hot foods hot with a thermos or insulated dish.
- Take along moist towelettes or washclothes.

ON THE ROAD

- Put cooler in passenger area of the car.
- At the picnic site keep the cooler in the shade, cover with a blanket, and avoid repeated openings.
- Replenish the ice if it begins to melt.

HEAT AND EAT

- Keep food cold until grill is hot.
- Cook food completely at the picnic site, no partial cooking ahead.
- Cook thoroughly—meat and poultry should not be pink, juices should run clear and fish should flake with a fork.
- Be careful that raw meat, poultry or fish juices do not touch other food.
- Use a clean plate and utensils for serving cooked food.

COME AND GET IT

- In hot weather (85° F and above), food should never sit out for more than 1 hour.
- Serving dishes should contain smaller portions: if necessary, replenish portions using clean dishes.
- Serve food quickly from the cooler, and put it back inside the cooler fast.

TAKING IT HOME

- Leftovers? Put perishables back into cooler immediately after eating. Perishable foods left off refrigeration over 2 hours (or over 1 hour when it's 85° F and above) are not safe and should be discarded. If perishables were on ice except during cooking and serving, and you were gone no more than 4 or 5 hours, you should be able to save the leftovers if there's still ice in the cooler or your gel pack is still solid.

OTHER QUESTIONS ON SUMMER FOOD SAFETY?

If you have questions about summer food safety, call the USDA Meat and Poultry Hotline at 800-535-4555. Hours: Monday-Friday, 10 to 4, Eastern Time. Washington, D.C. area residents call 202-720-3333.

-Marilyn Johnston

Canning Your Garden Bounty

by Diane VanLonkhuyzen, FSIS*
and Elizabeth Andress, Extension Service

Red juicy tomatoes, deep green snap beans and golden yellow corn—all are bounty from the summer garden. It's easy to see why canning fresh produce continues to be a popular activity.

But as new varieties—particularly lower-acid tomatoes—replace some old standbys, recommended canning procedures are changing too. Here are some tips to keep you canning safely.

New recommendations

- Creativity and canning don't mix. The Extension Service, the USDA canning experts, advises that everything that can be obtained as a commercial product cannot be duplicated in home canning.

This means you should only use tested recipes and methods. Why? The deadly botulinum toxin can grow in improperly canned low-acid foods.

For example, not all homemade versions of such favorites as hot salsas are safe. For a safe way to can fresh salsa, contact your local or state Extension specialist.

- Flavored salad oils are currently popular, and canners are interested in putting up their favorites such as garlic in oil. Unfortunately, safe home recipes for these products are not available yet, so we cannot recommend the home canner try to prepare them.

Improper canning of such oils could be extremely dangerous.

- **CAUTION:** Be careful when you buy home canned foods at fairs, roadside stands, flea markets and church bazaars. While the product may look great, you have no way of knowing if it was correctly processed. In most locales, the sales of home canned

foods are not routinely regulated.

- Newly tested recommendations for canning smoked fish, such as smoked salmon, are available from Oregon State University's Carolyn Raab, Food and Nutrition Specialist. For specific details contact your local or state Extension specialist.

Reminders

- Have the dial gauges on your pressure cookers tested yearly before the canning season starts. Check the gauges for accuracy and replace them if they read high by more than 1 pound. Contact your local or state Extension specialist for the names of testing facilities.
- Adding salt is not necessary when canning vegetables, tomatoes, meats, poultry and seafood. Salt seasons the food but is not necessary to ensure its safety. Salt or salt substitutes may be added when serving. However, salt is critical in canning pickles and fermented products. To make low-salt or no-salt pickled foods, use only tested recipes. Don't experiment with others!
- Tomatoes are usually considered acid foods but varieties do vary in levels of acidity. Also, due to varying soil conditions, some tomatoes may have acid levels slightly lower than in years past. Therefore, to ensure safe acid levels, all tomato products must be acidified with lemon juice or citric acid. Add two tablespoons bottled lemon juice or 1/2 teaspoon citric acid per quart of tomatoes.
- If tomatoes, vegetables, fruit, meat, poultry and fish are canned properly using tested recipes and recommended procedures, reheating for serving may not be necessary. Check each jar for a tight lid with a concave center, no unnatural color or odor. Be sure there is no mold growth on the

top of the food surface or on the underside of the lid. **DO NOT TASTE FOOD FROM A JAR WITH AN UNSEALED LID OR FOOD THAT SHOWS SIGNS OF SPOILAGE.**

- Paraffin or wax seals cannot assure that mold will not grow in jams and jellies. To prevent growth of molds and loss of flavor, jams and jellies should be processed in a boiling-water canner. If sterile jars are used, process for 5 minutes. If unsterile jars are used, process for 10 minutes.
- Home canned foods that are tightly vacuum sealed may be stored in a clean, cool, dark, dry place. Do not store jars in an area that will be below 32° F or above 90° F. Store jars at 50° F to 70° F for best quality. Under proper conditions, home canned goods can be stored on the shelf for 1 year.

For Further Information

- Your local or state Cooperative Extension Agent. Check the phonebook.
- *So Easy To Preserve*
Agriculture Business Office
203 Conner Hall
Cooperative Extension Service
The University of Georgia
Athens, Ga. 30602-7506
\$15.00 (includes shipping and handling)
- *The Ball Blue Book*
32nd Edition
Direct Marketing
P.O. Box 2005
Muncie, Ind. 47307
\$3.50 (\$1.00 shipping and handling)
- *Bernardin Guide to Home Preserving*
Bernardin of Canada, Ltd.
120 The East Mall
Etobicoke, Ontario
Canada M8Z 5V5
\$5.00 (includes shipping and handling)
- *The Kerr Kitchen Cookbook*
1990 Edition
Kerr Group Inc.
Consumer Product Division
P.O. Box 76961
Los Angeles, Cal. 90076
\$4.00 (includes shipping and handling) ❖

*Food Safety & Inspection Service

Control is the Key to Food Safety

by Marianne H. Gravely

Many people have been alarmed by the recent *E. coli* outbreaks. Actually, a rare *E. coli* strain—*E. Coli* O157:H7—is causing the trouble.

Subsequent news stories about bacteria associated with meat and poultry have raised concerns even further. People long for the days when they thought they could eat rare hamburgers without fear. What has changed to cause this seemingly sudden increase of dangerous bacteria in our food?

Actually, nothing and everything. During “the good old days” people contracted tuberculosis from milk and typhoid fever from water and seafood. Food poisoning bacteria have always been with us.

But the outbreaks we’re hearing about today are the result of five facts of modern life:

1) Modernization of the food industry, 2) Consumer demands for convenience foods, 3) Increased scientific knowledge and improved medical reporting, 4) Heightened press and consumer concern about new pathogens and 5) Lack of basic food handling knowledge. Let’s examine each in turn.

1. Modernization and expansion of the food industry and distribution system. Not too long ago, many people raised their own food, shopped for food every day, and selected their own live chicken for Sunday dinner.

Even city folks shopped daily and had a greater role in preparation. Back then a *convenience* food was a chicken that was already plucked!

But progress—providing food in the stores for a growing national population—has meant the growth of large-scale farming and production technologies. And these new processes have

introduced new and different bacterial risks.

2. Consumer Demands for Convenience. Today’s busy shoppers want more and more food preparation chores done for them. Because convenience sells, the foods we buy today barely resemble agricultural commodities. The extra handling they receive adds to contamination problems, but they look so “sterile” as plastic-wrapped products, consumers may forget they can carry pathogens.

3. Increased Scientific Knowledge and Improved Medical Reporting. What our grandparents called “the summer complaint,” we now know is foodborne illness, often caused by mishandling food in warmer weather. Scientists today can also identify thousands of organisms that cause foodborne illness. But as science progresses, we continually discover “new” organisms that must be investigated.

Improved medical reporting of foodborne illness, while a wonderful basis of knowledge to improve controls, also makes us more aware and wary of the problem.

4. Heightened Consumer Awareness. While scientists struggle to stay ahead of the new pathogens, the public has learned more about some common causes of foodborne illness.

People used to think of all foodborne illness as “ptomaine” or botulism. Now they know there are bacteria like salmonella, listeria, campylobacter and *E. coli*. It’s helpful to know more, but it also raises your level of concern.

5. Lack of Basic Food Handling Knowledge. Although awareness of bacteria is increasing, knowledge of safe food handling practices has lagged

behind. Some 70 percent of callers to USDA’s Meat and Poultry Hotline need help with basic food handling procedures that are vital to keeping food safe.

Any perishable food can cause foodborne illness. In addition to recent problems with *E. coli* O157:H7, we’ve seen illness caused by salmonella in tomatoes, cantaloupes and eggs, listeria in soft cheese and botulism in baked potatoes and garlic bottled in oil. In several of these cases, the foods were mishandled in a restaurant or at home.

Control is the Key. While food is now plentiful, widely available, and relatively inexpensive, there are many steps between the farm and the fork where bacterial problems can develop.

Still there are a number of practical things you can do to regain control and protect yourself and your family from foodborne illness:

- Most food poisoning bacteria generally do not grow (or grow very slowly) at refrigerator temperatures (below 40° F), so get meat and poultry into the refrigerator or freezer as soon as possible after you buy it.
- Most foodborne bacteria are easily killed by cooking. Cook meat and poultry thoroughly—160° F for meat. For doneness, poultry should reach 170° to 180° F.
- Refrigerate leftovers immediately in small shallow containers so they cool quickly.
- Be careful not to cross-contaminate foods by allowing raw meat, poultry, fish or their juices to contact food that won’t be cooked. ❖

For further information on safe food handling, call USDA’s Meat and Poultry Hotline 800-535-4555. The Hotline runs 10 to 4 weekdays, Eastern Time. Washington, D.C. area residents call 202-720-3333.

NEWSWIRES

No Conclusive Evidence on Cutting Boards Yet

"Which is better, wood or plastic cutting boards?" Nearly 300 callers have asked the USDA Meat and Poultry Hotline this question since the preliminary results of a new University of Wisconsin study were released last spring.

Research conducted by Dr. Dean Cliver and an associate seems to show that "in some as-yet-unknown way, wooden cutting boards kill bacteria that survive well on plastic boards."

The researchers purposely contaminated wood and plastic boards with bacteria. Held overnight at room temperature, bacteria increased greatly on the plastic cutting boards but none were found the next day on the wooden boards.

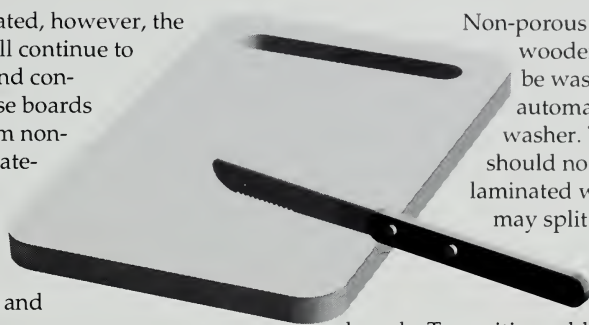
Until this research is published, reviewed by other researchers and fully

substantiated, however, the USDA will continue to recommend consumers use boards made from non-porous materials such as plastic or glass for cutting meat and poultry.

If you want to use a wooden board for cutting meat and poultry, use it exclusively for those products.

Further, no matter which type of cutting boards you have or plan to purchase, keeping them clean is the key to food safety.

All cutting boards should be washed with hot, soapy water after each use. Let the board air dry or pat it with fresh paper towels.



Non-porous and solid wooden boards can be washed in an automatic dishwasher. This method should not be used for laminated wood, which may split.

Once a week, sanitize all cutting

boards. To sanitize, add 2 teaspoons chlorine bleach to a quart of water. Flood the board's surface with the solution and let it stand a few minutes. Rinse the board in clear water and air dry or pat it with fresh paper towels.

Replace plastic boards that become excessively cut or grooved.

-Susan Conley and CiCi Williamson

Need Help on Label Education?

A single database in the National Agricultural Library (NAL) is helping thousands of American consumers learn how to read the new food labels. How? By sharing information.

Government agencies, trade associations, Extension agents, food industry representatives, health organizations and consumer groups are logging their label education projects into a database at the NAL's Food Labeling Education Information Center.

This enables educators to call the Center for materials they need in their communication efforts.

The Center's goal, with support from USDA and FDA, is to prevent duplication of effort and assure that all segments of the population learn to use the new nutrition labels.

If you or your organization have materials you'd like to list (print or video), call Gina McNeal at 301-504-5719 for an entry form.

—Gina McNeal

Cryptosporidium Update

Recent problems with contaminated water in metropolitan Milwaukee were traced to a microscopic parasite few people had ever heard of before—cryptosporidium.

Cryptosporidium, a parasite found in many species of birds and animals, was also responsible for the recall of some pickled meat products produced in Wisconsin last April.

Although no illnesses have been directly linked to any of the products, the USDA urged consumers to return suspect products to the place of purchase.

Consumption of food contaminated with the parasite can cause cryptosporidiosis, a rare but potentially serious disease. Symptoms include severe diarrhea, dehydration, nausea, fever and abdominal cramps.

Unknown as a human disease until 1976, cryptosporidium is now considered one of the foremost causes of

diarrhea in the world, especially among children.

As with many other intestinal infections, people and animals can get the disease by ingesting food or water contaminated with fecal material.

Of course, safe food handling practices and good personal hygiene, especially hand washing, can lower infection rates.

People with weakened immune systems (AIDS and cancer patients, for instance), infants and the elderly are particularly susceptible.

Consumers with questions about cryptosporidium may phone the USDA Meat and Poultry Hotline at 1-800-535-4555. The Hotline can be reached from 10 to 4 Eastern time Monday through Friday.

-CiCi Williamson

In Our Holidays 1993-1994 Issue

TAKING THE MYTH-STERY OUT OF SAFE HOLIDAY FOOD PREPARATION

Just the FACTS on

- Traditional, but *unsafe* cooking & serving practices
- Using deli items & whole prepared dinners safely
- You should have one! A cook's tour of the new thermometers
- Our new Holiday Meats MEGA-CHART on turkey, poultry, game, ham

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FOOD NEWS

Holidays 1993-94
Vol. 10, No. 4

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Wishing You a "Super" Holiday Season

*A Message from USDA's Hotline Manager,
Susan Conley*

Around holiday time, the home economists on the Meat and Poultry Hotline become "super heroes," helping thousands of callers make safe choices on the preparation of Thanksgiving turkeys and many other holiday foods.

"Super Turkey," our cover mascot, stands for superior service—both on the Hotline and in the presentation of this "super" holiday *Food News*.

Over the years we've heard a number of unsafe cooking methods from Hotline callers. These are debunked—and safe procedures detailed—in "Turkey Myths."

A perennial favorite with readers, the "Turkey Basics" chart, has been updated with the last word on smoking, grilling and microwaving the holiday bird.

Rushed for time like the rest of us? See "Thanksgiving Takeout." From pickup to leftovers, this covers handling the ready-prepared dinners many people are now buying from delis, department stores and caterers.

Irradiated food has now been successfully introduced in several parts of the country. Treated strawberries are selling well in Florida and irradiated poultry is a hit in Illinois. The "Ten Most Commonly Asked Questions on Food Irradiation" is an important information update.

If you have holiday food questions we haven't answered in this issue, call us at 800-535-4555. And have a SUPER Holiday! The turkey made me say that.



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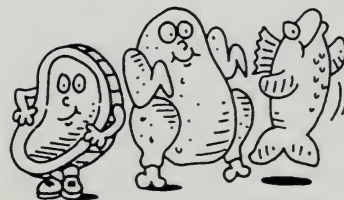
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Turkey Myths

by Barbara O'Brien, R.D.*

- *Stuffing a turkey the night before is a good time saver.*
- *The more expensive the turkey, the better it will taste.*
- *If one turkey takes 3 hours to cook, two will take 6 hours.*
- *Smoked turkey lasts longer.*
- *Turkey tastes best roasted in a brown grocery bag.*

How many times have you heard these myths and wondered whether they are fact or fiction? For example, what *would* happen if you stuffed the turkey the night before? It would certainly save time the next day!

Unfortunately, some of these widely held beliefs are risky business. Here are the facts.

MYTH 1: Stuffing turkey the night before is a good time saver.

FACT: Harmful bacteria can multiply in the stuffing and cause food poisoning even when the stuffed bird is refrigerated. The cavity of the bird actually insulates the stuffing from the cold temperatures of the refrigerator and acts as an incubator for harmful bacteria.

THE RIGHT WAY: The ingredients for the stuffing can be prepared and refrigerated separately the night before. Then mix your stuffing just before you put the turkey in the oven. Stuff the turkey and cook immediately. Another option is to mix and pop the stuffing into the oven in a casserole dish during the last hour or so the turkey is baking.

* Registered Dietitian

MYTH 2: Price is the best indicator of quality.

FACT: All turkeys in the market are young (usually 4 to 6 months of age) and therefore tender. While stores price turkeys low to attract shoppers, that is no indication of quality.

THE RIGHT WAY: Look for a USDA or state inspection mark that indicates the turkey is safe and wholesome. Personal preference and storage space usually dictate whether you buy fresh or frozen, pre-basted or unbasted.

Pre-basted birds may contain vegetable oil, broth and spices added to give flavor and keep the bird moist.

USDA Grade A, the highest quality grade, means a bird is well shaped and free of pinfeathers, cuts and bruises.

MYTH 3: If one turkey takes 3 hours to cook, two will take 6 hours.

FACT: Cooking two turkeys of about the same weight does not double the roasting time. In fact, cooking two takes no longer than if there were only one bird in the oven.

THE RIGHT WAY: Just make sure there is sufficient oven space for both turkeys so the heat can circulate properly, and check each one *separately* for doneness. When the birds are done, a meat thermometer, placed in the meatiest part of the thigh, should register 180° F. When you poke the turkey with a fork, the juices should run clear.

If you're microwaving turkey, however, cooking time is based on the combined weight of the turkey pieces. It takes longer to microwave several pieces.

Again, use a meat thermometer to determine when the pieces are done. After standing covered outside the microwave for 10 to 15 minutes, turkey breasts should reach 170° F; thighs and drumsticks, 180° F.

MYTH 4: Smoked turkey lasts longer.

FACT: Turkeys are smoked for flavor, not to extend the time you can keep them refrigerated.

THE RIGHT WAY: Store a fully-smoked turkey in the refrigerator, unopened, no longer than 1 week. Once the packaging is opened, the bird will last 3 to 4 days. Otherwise freeze it for use within 6 months.

Fresh turkeys may be stored 2 days in the refrigerator and frozen up to 12 months.



MYTH 5: Turkey tastes best roasted in a brown grocery bag.

FACT: The glue and ink on brown bags were never intended for use as cooking materials and may give off harmful fumes. Also, brown bags are usually made from recycled materials and are not sanitary.

THE RIGHT WAY: To cook your turkey safely in a bag, use a commercial oven bag. The bags are time savers too, particularly if you're fixing a large bird.

MYTH 6: Thawing on the counter is quick and easy.

FACT: Thawing on the counter may be faster than defrosting in the refrigerator, but it's unsafe for turkey or any meat or poultry product.

Why? Bacteria on turkey grow rapidly at room temperature. When the outside portion of the bird begins to thaw, these bacteria can multiply to dangerously high levels that cooking may not destroy.

THE RIGHT WAY: Defrost your turkey in the refrigerator. Generally, allow 24 hours of defrost time for every 5 pounds of turkey. A 20-pound bird will take 4 to 5 days.

Thawing in cold water is safe too. Submerge the bird in its wrapper in a deep sink of cold water and change the water about every 30 minutes to

keep it cold. It takes 30 minutes per pound to defrost this way.

Microwave thawing is another option. Make sure your oven is large enough for the bird, and follow the instruction manual. **CAUTION:** Because microwave defrosting can encourage bacterial growth in parts of the turkey that become warm, cook the bird immediately. Do not refrigerate it for later cooking.

MYTH 7: Overnight cooking at a low temperature produces the best-tasting turkey.

FACT: Cooking below 325° F is unsafe because low temperatures permit the bird and the stuffing to stay in the "danger zone" (40° to 140° F) too long. Bacteria can grow at these temperatures and some produce toxins or poisons that completion of cooking won't kill.

THE RIGHT WAY: Don't play turkey "limbo" (how low can you go?) with your holiday bird. Roast at 325° F and use a meat thermometer to check for doneness (180° F in the inner thigh, 170° F in the breast, 165° F in the stuffing.) Juices should be clear and the legs should wiggle freely in the sockets.

For thorough cooking, allow about 15-18 minutes per pound for an unstuffed bird and 18-24 minutes per pound for a stuffed turkey.

MYTH 8: Once it is safely cooked, the turkey can sit on the counter all day.

FACT: No raw or cooked meat or poultry should be left off refrigeration over 2 hours. Harmful bacteria can grow at room temperature, and it's very easy to spread bacteria to a cooked bird just by touching it with your hands.

THE RIGHT WAY: After the meal is over, remove all the meat from the bones. Store leftovers in several small, shallow containers. Use leftover turkey and stuffing within 3 to 4 days; gravy in 1 to 2 days, or freeze for later use.

MYTH: It is hard to cook a turkey.

FACT: Not so, say the home economists and registered dietitians on USDA's Meat and Poultry Hotline. With a little planning, and maybe some phone help from our Hotline staff, you can pull off a safe, delicious meal. ❖

Further turkey questions? Call the USDA Meat and Poultry Hotline. Normal hours are 10 to 4 weekdays, Eastern Time. In November, hours are 9 to 5. The Hotline will be open the weekend before Thanksgiving, Nov. 20 and 21, 9 to 5, and Thanksgiving Day, 8 to 2. Call 800-535-4555. Washington, D.C. area residents call 202-720-3333.

Thanksgiving

TAKEOUT...?

by CiCi Williamson, C.H.E.*

THE TIME: Late November

THE PLACE: Anytown, U.S.A.

THE EVENT: Thanksgiving

THE PROBLEM: No time to cook

THE SOLUTION: Takeout

For many people, the grocery, deli, restaurant or a caterer may be the closest thing to Grandma's home-cooked Thanksgiving dinner.

Some don't have time to cook. Others don't know how or don't want to. So, they dial their favorite food outlet and order turkey and all the trimmings. They pick it up in the car and they're ready to go.

THE TIME: After Thanksgiving dinner

THE PROBLEM: Some diners became ill

THE SOLUTION: Safe food handling



What happened between the time the turkey dinner was safely cooked and when it caused diners to become ill?

POSSIBLE MISTAKES: The turkey may have been in the Danger Zone (temperatures between 40° F and 140° F) for over 2 hours, either sitting in the car while the family shopped or left on the counter several hours before the big meal. Also, the

stuffing may have been left inside the bird after cooking.

These and other mistakes made in handling ready-prepared turkey dinners can put diners at risk for food-borne illness. To ensure that your Thanksgiving is safe as well as convenient, follow these guidelines.

TO BE TAKEOUT SAFE

1. Ask questions. Before placing your order, find out what time your turkey will emerge from the oven.

Arrange for pickup as close to your dinnertime as possible. All cooked foods should be picked up, served and the leftovers refrigerated within 2 hours.

If the turkey will be at refrigerator temperature when you pick it up, be sure it feels cold to the touch. Ask that the stuffing be removed and packaged separately.

*Certified Home Economist

2. Arrange for pickup. Your turkey dinner may be delivered to you or you may have to pick it up yourself.

If your meal is being delivered, find out if the delivery van is equipped to keep cold foods cold and hot foods hot. If not, order from another source.

If you're making the pickup, take everything home immediately. Driving "over the river and through the woods" for some distance? Carve a hot bird and chill meat and trimmings. Pack a cooler with ice or freeze-packs to keep the turkey and trimmings cold en route.

3. Handle safely at home. The doorbell rings. Your turkey has arrived. Now what?

First check the bird. A hot turkey should be just that—HOT (140° F or above on the meat thermometer). A refrigerated turkey should be cold to the touch. Turkeys with stuffing left inside may not be safe. Don't accept them.

If your dinner won't be served for an hour or so, give up the idea of serving a whole, picture-perfect bird.

Carve all the meat, leaving individual thighs, drumsticks or wings intact if you wish. This is important to ensure rapid, even cooling and quick reheating.

Refrigerate the meat covered in several small, shallow containers or in foil, plastic wrap or plastic bags.

To serve, reheat in a 325° F oven until the meat reaches 165° F. Or heat in the microwave in a covered casse-

A Takeout Tip Sheet

- Rule: Perishable food should never be in the danger zone (40° to 140° F) over 2 hours.
- Pickup, serve and refrigerate leftovers from your prepared dinner within 2 hours.
- If you won't be serving your meal in an hour or so, carve the meat off the bird and refrigerate it in small leftover dishes.
- Reheated meat should reach 165° F.
- For a buffet dinner, present hot food in chafing dishes or electric hot trays to maintain safe, high temperatures.
- Leftovers - Refrigerate them in several small, shallow containers or in foil, plastic wrap or plastic bags.

role one batch at a time until steaming hot.

If a whole refrigerated turkey is delivered to you, do not reheat it intact. Carve and reheat it as above. Reheat the other dishes to steaming too.

4. Serving and storing. Once dinner has been heated, serve it immediately. When serving a large group, make up several platters ahead of time and keep them in the refrigerator or oven until you need refills.

For a buffet dinner, keep food warm on electric hot trays or in chafing dishes with a heat source below. These should hold the food at temperatures above 140° F. But even in a heated unit, never leave food out more than 2 hours.

One of the benefits of Thanksgiving dinner is having delicious leftovers to enjoy later. But remember, turkey and other dinner leftovers are NOT safe left out all day. Refrigerate leftovers immediately.

Direct nibblers to the refrigerator where they should take out only what they want, putting the remainder back.

Stuffing and gravy should be safe in the refrigerator 2 days; cooked leftover turkey and other accompaniments, 4 days.

Plan ahead. Divide leftovers into refrigerated quantities that will be used fairly quickly and freezer batches for later use. For best quality, use frozen leftovers in 4 to 6 months.



Further turkey questions? Call the USDA Meat and Poultry Hotline. Normal hours are 10 to 4 weekdays, Eastern Time. In November, hours are 9 to 5. The Hotline will be open the weekend before Thanksgiving, Nov. 20 and 21, 9 to 5, and Thanksgiving Day, 8 to 2. Call 800-535-4555. Washington, D.C. area residents call 202-720-3333.

The New, Improved Turkey Basics From USDA!

BUYING A TURKEY

FROZEN	FROZEN PRE-STUFFED	FRESH	PRE-COOKED
Buy any time but keep frozen until 1-5 days before cooking. (See THAWING)	Buy any time. Keep frozen until ready to cook. DO NOT THAW.	Buy 1-2 days before cooking DO NOT BUY PRE-STUFFED.	Serve immediately within 1-2 hours of removal from oven.
1 lb. per person	1-1/4 lbs. per person	1 lb. per person	1 lb. per person

THAWING A TURKEY

THAWING TIME IN THE REFRIGERATOR	THAWING TIME IN COLD WATER	THAWING IN THE MICROWAVE
(Whole Turkey)	(Whole Turkey)	Check manufacturer's instruction for the size turkey that will fit into your oven, the minutes per pound, and the power level to use for thawing. Cook immediately after thawing.
8 to 12 pounds 1 to 2 Days	8 to 12 pounds 4 to 6 Hours	
12 to 16 pounds 2 to 3 Days	12 to 16 pounds 6 to 8 Hours	
16 to 20 pounds 3 to 4 Days	16 to 20 pounds 8 to 10 Hours	
20 to 24 pounds 4 to 5 Days	20 to 24 pounds 10 to 12 Hours	
	(Change water every 1/2 hour)	

After thawing, remove neck and giblets, wash turkey inside and outside with cold water, drain well. Defrosted turkey may remain in refrigerator 1-2 days.

❑ WASH HANDS, UTENSILS, SINK, AND ANYTHING ELSE THAT HAS CONTACTED RAW TURKEY.

STUFFING A TURKEY

STUFFING IN THE TURKEY	STUFFING SEPARATE
Mix and stuff ingredients immediately before putting in oven. Stuff lightly. Cooking time takes longer. Allow 3/4 cup stuffing per lb. of turkey.	If you are in a hurry, bake stuffing in greased, covered casserole during last hour while turkey roasts.

ROASTING A TURKEY

Timetable for Fresh or Thawed Turkey at 325° F

WEIGHT (pounds)	UNSTUFFED (hours)	STUFFED (hours)
4 to 6 (breast)	1-1/2 to 2-1/4	Not Applicable
6 to 8	2-1/4 to 3-1/4	3 to 3-1/2
8 to 12	3-1/4 to 4	3-1/2 to 4-1/2
12 to 16	4 to 4-1/2	4-1/2 to 5-1/2
16 to 20	4-1/2 to 5	5-1/2 to 6-1/2
20 to 24	5 to 5-1/2	6-1/2 to 7
24 to 28	5-1/2 to 6	7 to 8-1/2

Place turkey breast-side up on a rack in a shallow roasting pan. Insert meat thermometer in thigh. Do not add water. Cover turkey with loose tent of heavy-duty aluminum foil. Remove foil 20-30 minutes before roasting is done. Final temperature for safety and doneness—180° F in thigh; 170° F in breast; 165° F in stuffing. Juices should be clear not pink. For a more moist bird, *unstuffed* turkey may be cooked to 170° F.

❑ WHEN TURKEY IS DONE, REMOVE STUFFING. LET BIRD STAND 20 MINUTES FOR BETTER CARVING. THEN SERVE SLICED TURKEY AND STUFFING.

ROASTING TURKEY PARTS

Timetable for Fresh or Thawed at 325° F

	Weight (pounds)	Unstuffed (hours)
Turkey breast	4 to 6	1-1/2 to 2-1/4
Turkey halves	5 to 11	3 to 5-1/2
Quarters, thighs, drumsticks		1 to 1-3/4
Boneless turkey roast	3 to 10	3 to 4

ROASTING A TURKEY IN A COOKING BAG IN THE CONVENTIONAL OVEN

Timetable for Fresh or Thawed at 350° F

Weight (pounds)	Unstuffed (hours)	Stuffed (hours)
8 to 12	1-1/2 to 2	Add 30 minutes for stuffed turkey.
12 to 16	2 to 2-1/2	
16 to 20	2-1/2 to 3	
20 to 24	3 to 3-1/2	

Follow cooking bag instructions. The turkey is done when a meat thermometer placed in the thigh reaches 180° F.

FRESH OR THAWED WHOLE TURKEY IN THE MICROWAVE

At Medium (50% power) in a Cooking Bag in a 650 Watt or above Microwave Oven

Weight (lbs) Whole Turkey	Directions
8 - 12	Shake 1 Tbsp. flour in cooking bag. After placing bag in a deep microwaveable dish, put turkey into bag. Add seasonings per microwave bag instructions. Microwave on medium power for 7 - 9 minutes per pound. Rotate dish every 15 minutes. Use a microwave-safe meat thermometer. Turkey is done when the thermometer reads 180° F. Microwave cooking is not recommended for a turkey over 12 pounds due to space limitations in the oven.

GRILLING FRESH OR THAWED TURKEY

Allow 15 to 18 minutes per pound for an unstuffed turkey

Gas/Charcoal Covered Grill	Charcoal Grills	Gas Grills
Arrange charcoal on both sides of the grill with a drip pan in the center of the coals. Place the whole turkey on a rack over the drip pan. Cover grill. Add a few coals to each side every hour.	Stack coals in a pyramid and light. Coals should be very hot before cooking and show a grey coating of ash for optimal heat. Place rack 6 - 8 inches from coals. Meat is done when the meat thermometer reaches 180° F.	Follow manufacturer's instructions. Use a meat thermometer inserted in the thigh of the turkey. Meat is done when the thermometer reaches 180° F.

SMOKING FRESH OR THAWED TURKEY

Smoking is a slow grilling method which adds flavor to meat. Heat and water are critical in smoking. Use high quality charcoal to build a hot fire. Place about 50 briquets in smoker and light. Charcoal should show a grey ash	when ready to cook. Place a pan of water in the smoker. Center fresh or thawed whole <i>unstuffed</i> 10 - 15 pound turkey over water pan and close the lid. To ensure smoker maintains a safe temperature of 250° - 300° F, add	coals every 1 - 2 hours. Depending on the size of the bird, the process can take up to 8 hours. Turkey is done when a meat thermometer placed in the thigh reaches 180° F.
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STORING YOUR LEFTOVERS

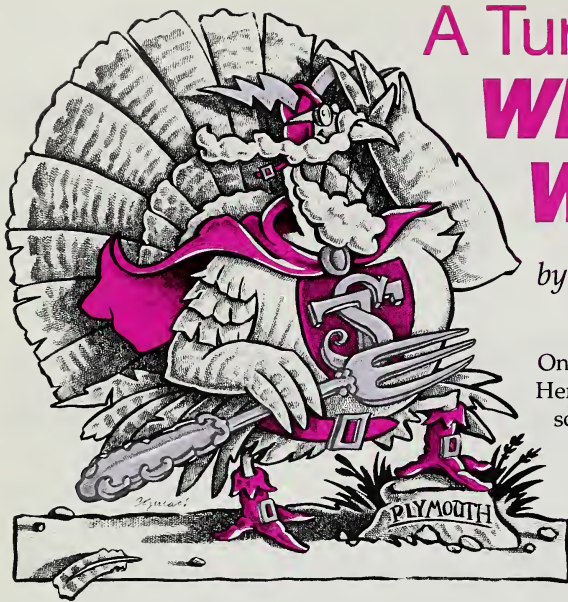
Divide turkey into small portions and store in several small containers. Turkey will keep 3-4 days in	refrigerator. Use stuffing and gravy within 1-2 days. Reheat leftovers until "steamy hot," 165° F. Bring gravy to	rolling boil before serving. For best quality, use frozen turkey, gravy, and stuffing within one month.
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OTHER QUESTIONS ON YOUR HOLIDAY TURKEY

If you have questions about your holiday turkey, call the USDA Meat and Poultry Hotline at 1-800-535-4555. Washington, D.C. area residents, call 202-720-3333.

Hours: Monday-Friday, Nov. 1-30, 9 to 5 EST
Saturday and Sunday, Nov. 20-21, 9 to 5

Thanksgiving Day, Nov. 25, 8 to 2
Monday-Friday, Year Round, 10 to 4



A Turkey Who, What, Where & When

by CiCi Williamson, C.H.E.*

Only male turkeys gobble. Hens make a clicking sound. Males have a "beard," a black lock of hair found on the chest.

Both sexes have a "comb," the colorful red-violet and blue covering on top of the head, and a "wattle," a bright red appendage at the neck.

the head, and a "wattle," a bright red appendage at the neck.

WHEN? A turkey calendar

More than 300 million turkeys are raised year-round, but until holiday time, most are made into processed products such as lunchmeat and turkey ham.

Almost a fourth of whole turkeys are eaten at Thanksgiving, Christmas and Easter. In October, production shifts to whole birds and plants operate longer hours to meet the holiday demand.

USDA inspectors look at every bird to inspect for visible signs of disease. After washing and chilling, turkeys may be graded.

A grade A turkey should have no torn skin greater than 1 inch, no pinfeathers, no bruises and no improper cuts with knife or machine. The turkey should be well fleshed out with no discoloration.

WHERE? Turkey geographics

North Carolina produces more turkeys than any other state. Yearly, 62 million turkeys are raised there. Minnesota is second with 44 million.

Other states in the top ten are Arkansas, California, Missouri, Virginia, Indiana, Pennsylvania, Iowa and South Carolina.

There are more than 3,000 farms nationwide that produce in excess of 2,000 turkeys each.

WHY? The turkey tradition

The first meal eaten on the moon by astronauts Neil Armstrong and Edwin Aldrin was roast turkey with all the trimmings. But most turkey dinners are eaten on earth, the greatest number on Thanksgiving.

Virginians claim to have celebrated the first Thanksgiving on December 4, 1619, at Berkeley Plantation located just southeast of Richmond on the James River.

But most people associate the holiday with the Pilgrims who ate their famous harvest meal with the Indians in 1620. And, actually, they ate wild turkey.

Today we eat turkey at Thanksgiving because it's traditional. Turkey is a wild native American bird that traveled to Europe to get domesticated and returned to our shores a plumper, more tender bird.

Benjamin Franklin thought the turkey should be the national bird, but perhaps others thought we shouldn't eat our American symbol. Thus, since the bald eagle is a protected species, you won't see one at a single Thanksgiving table. At least, we hope not! ♦

It's an invasion...of turkeys. Every year about this time, the big birds start flying into supermarket display cases. What's behind all this?

WHO? How turkeys are raised

The whole turkeys consumers buy for Thanksgiving dinner were just eggs this summer while you were at the beach.

It takes the egg 4 weeks to hatch into a baby chick. The "poult" eats its way through 84 pounds of feed during the next 14 weeks or so to be the right size for your table.

The feed contains corn and soybean meal mixed with vitamins and minerals. Turkeys are not fed hormones. Antibiotics may be used to treat illness just as they are for people.

Nearly all turkeys raised are the White Broad Breasted breed and they have about 3,500 feathers at maturity.

WHAT? A personal profile of the holiday bird

Almost all birds destined for holiday tables are hen turkeys. Tom turkeys are four weeks older and weigh almost twice as much.

*Certified Home Economist

and also by toasting, frying and freeze-drying, but they quickly change into other, more stable forms.

Despite extensive research, there is no evidence that irradiated foods present any increased risk of exposure to harmful substances over conventionally processed foods.

7. Will my risks of radiation exposure increase significantly if I live next to an irradiation processing plant?

No. In fact, you receive more radiation exposure during a transcontinental airline flight. Irradiation facilities must include many safety features to prevent both environmental and worker exposure. A food irradiation plant is not a nuclear reactor. There is no chance of meltdown. The use and transportation of radioactive materials—including the equipment and the facilities in which they are used—is closely monitored by the Nuclear Regulatory Commission, state agencies, and the Department of Transportation.

8. For what other purposes is irradiation technology now used in the United States?

Irradiation is used for sterilizing medical products such as surgical gloves, destroying bacteria in cosmetics, making nonstick cookware coatings, purifying wool, performing security checks on hand luggage at airports, and making tires more durable.

9. Are irradiated foods on the U.S. market now?

Until recently only bulk dried spices were irradiated in the United States. Since January 1992, irradiated produce has begun to appear in some American supermarkets. At least a dozen different irradiated foods are being sold.

10. How can irradiated foods be identified in the market?

By law all irradiated foods must be labeled with the international symbol for irradiation, simple green petals (representing the food) in a broken circle (representing the rays from the energy source). This symbol must be accompanied by the words, "Treated by Irradiation" or "Treated with Radiation."



For more information about food irradiation, call the Meat and Poultry Hotline, **1-800-535-4555**.

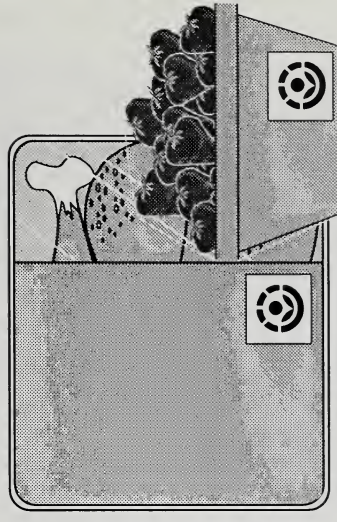
In the Washington, D.C. area, call (202) 720-3333.



United States Department of Agriculture
Food Safety and Inspection Service
Revised August 1993



Ten Most Commonly Asked Questions About Food Irradiation



In September 1992, USDA's Food Safety and Inspection Service approved guidelines for use of irradiation in raw, packaged poultry. The FSIS decision followed a May 1990 FDA rule, which concluded that poultry irradiation at the absorbed dose of 3 kiloGrays does not pose a safety hazard to consumers and is effective in controlling foodborne illness.

Following are commonly asked questions and answers about food irradiation.

1. Why is food irradiated?

Food is irradiated to make it safer and more resistant to spoilage. Irradiation destroys insects, fungi or bacteria that cause human disease or cause food to spoil. Irradiation makes it possible to keep food longer and in better condition.

Because irradiation destroys disease-causing bacteria, the process has been used by hospitals to sterilize food for immunocompromised patients.

2. Are irradiated foods still nutritious?

Yes, irradiated foods are wholesome and nutritious. In fact, even at the higher doses of irradiation used to extend shelf-life or control harmful bacteria, nutritional losses are less than, or about the same as cooking and freezing. At lower doses, nutrient losses are either not measurable or insignificant. The fact is, all forms of food processing—cooking, freezing, canning, and even storing foods—lower the amounts of some nutrients.

Irradiation produces virtually no heat within food, and most people cannot detect any changes in flavor or texture.

3. Does irradiation make food radioactive?

No. The energy used in food irradiation is not strong enough to cause food to become radioactive. Irradiation involves *passing food*

through an irradiation field, but the food never touches a radioactive substance. During irradiation, energy passes through food much like a ray of light passes through a window. This energy destroys most of the bacteria that can cause disease, yet allows food to retain its high quality.

Since the energy involved in irradiation is not strong enough to change the atoms of the food, and since the food never actually touches the radioactive source, the food cannot become radioactive.

4. Does eating irradiated food present health risks?

No. Scientists from the Food and Drug Administration, U.S. Department of Energy, as well as from many universities within the United States reviewed several hundred studies on the effects of food irradiation before reaching conclusions about its safety.

Independent scientific committees in Denmark, Sweden, the United Kingdom, Canada and the World Health Organization have also endorsed food irradiation. Food irradiation has been approved in 37 countries for more than 40 products.

5. Does irradiation destroy all bacteria, resulting in a sterile product?

No. Irradiation *pasteurizes* food by using energy, just as milk is pasteurized using heat. At the level

used, *most* harmful bacteria will be destroyed. Afterwards, surviving bacteria could start to multiply if the food were mishandled; for example, stored at an improper temperature. The level of irradiation used also does not kill certain *spoilage* organisms. This is for the protection of consumers. Spoilage bacteria will multiply and alert consumers not to use a product which has been improperly handled.

As with any food, consumers must take appropriate precautions, such as refrigeration and proper handling and cooking, to make sure that potentially harmful organisms do not present a problem.

6. Does irradiation cause chemical changes in food, perhaps producing substances which are not present in non-irradiated foods?

Any kind of processing causes changes in food. Heat produces "thermolytic products," while irradiation produces similar chemicals called "radiolytic products." Radiolytic products are so minor they are measured in *parts per billion* and can only be detected with sensitive laboratory equipment. Thermolytic products, on the other hand, can be smelled, tasted, and seen.

"Free Radicals" are atoms or molecules that are unstable and very reactive. They can be formed during irradiation,

NEFLE News

Have you looked at our database lately?

by Joan Troiano

Whether you're developing a nutrition labeling education project or searching for new materials to use with your nutrition program, the database at NEFLE's Food Labeling Education Information Center is only a phone call away.

"We have nearly a hundred projects listed now," said Gina McNeal, project coordinator. "The current list includes label education research, videos and materials in Spanish."

The database is sponsored by NEFLE—the National Exchange for Food Labeling Education, funded by USDA and FDA.

But there are still a number of educational "gaps" to be filled. "I'd like to know," said Gina, "if anyone is preparing material that reflects cultures other than Hispanic." Call Gina McNeal at 301-504-5719.

Meanwhile, here's how to order these *completed* projects.

- **"The New Food Label & You,"** from FSIS, is a copyable 8-page black-and-white reprint of the food labeling articles from the Spring-Summer 1993 issue of *Food News for Consumers*.

Availability: Now available.

Cost: FREE.

Order from: USDA-FSIS, Room 1180-S, Washington, D.C. 20250.

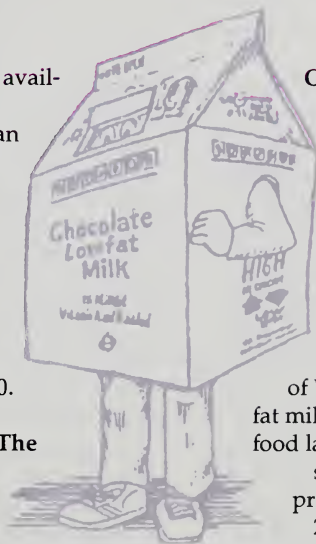
- **"Food Labels,"** a 6 1/2-minute video from FDA, introduces the new food label.

Availability: Now available.

Cost: None. For loan or limited duplication and distribution only.

Order from: FDA, Office of Public Affairs, 5600 Fishers Lane, HFI-40, Rockville, Md. 20857, 301-443-3220.

- **An FDA speech, "The New Food Label,"** is designed for non-technical audiences. This 20-minute presentation stresses key label education messages.
Availability: Now available.
Cost: FREE.
Order from: NAL, The Food Labeling Education Information Center, Rm. 304, 10301 Baltimore Blvd., Beltsville, Md. 20705-2351, 301-504-5719.
- **"The New Food Labels: How to Make Eating to Lower Cancer Risk Easy,"** from the American Institute for Cancer Research, tells consumers how to use the new food label to eat healthier and lower cancer risk. Text covers health claims, nutrient content claims, serving sizes and daily values.
Availability: Now available.
Cost: Up to 2 copies FREE. Call for bulk orders.



Order from: American Institute for Cancer Research, 1759 R Street, N.W., Wash., D.C. 20069, 800-843-8114. Washington, D.C. area residents call 202-328-7744.

- **The "Milk Carton,"** from the Dairy Council of Wisconsin, is a giant low-fat milk carton carrying the new food label. Use as a costume or stand-alone display or prop (height, 40"; width, 20"). Comes with an 8-page teaching guide.

Availability: Now available.

Cost: \$17.00. Make check or money order payable to the Dairy Council of Wisconsin.

Address: 999 Oakmont Plaza Drive, Ste. 510, Westmont, Ill. 60559, 800-325-9121.

- **"How to Read the New Food Label,"** from National Health Videos, is a 14-minute videotape detailing nutrition label changes and suggesting how the new label can assist people in moving toward a healthy diet. Suitable for teens and adults. Available in Spanish.
Availability: Now available.
Cost: \$79.95. 10-day FREE preview.
Address: 12021 Wilshire Blvd., Ste. 550, Los Angeles, Cal. 90025, 800-543- 6803. ❖

The Search for a Low-Fat Burger

Nearly everyone is tuned in on reducing cholesterol and fat intake these days. And wouldn't it be nice to have the cake—or the hamburger—and eat it too?

Now there's hope for the ever elusive low-fat but *tasty* hamburger.

Until now there was a problem. When you remove fat from meat products, eating quality also goes down. So you have a low-fat, but not terribly palatable product.

USDA scientists are now trying to work around this by testing alternate ingredients that will improve the eating quality of low-fat ground beef. One of the more promising possibilities is the use of potato starch with added water to improve tenderness and reduce the amount of shrinkage when low-fat beef patties are cooked.

For more information, contact Dr. Brad Berry at USDA's Agricultural Research Service in Beltsville, Md., 301-504-8994.

-Herb Gantz

Two Breakthroughs in the Science of Meat Safety

A naturally-occurring preservative called *nisin*, when combined with certain commonly used food additives, is showing some promise in suppressing the growth of foodborne bacteria on red meat.

Lab tests conducted by USDA's Agricultural Research Service (ARS) showed that nisin, when used with other additives like citric and lactic acid, actually reduced the growth of *E. coli* O157:H7 and *Salmonella typhimurium*.

ARS scientists are now working out the optimum mixtures of nisin and other compounds to control bacteria commonly found on red meat. The *E. coli* O157 bacteria caused several tragic outbreaks this year.

How moist should packaged meat and cheese snacks be? In a second breakthrough, ARS researchers have established moisture limits that will help prevent bacterial growth in semi-dry products like clear-plastic packed meat and cheese sticks.

Staphylococcus aureus, a type of food-borne bacteria, often causes problems in these foods. This research will be vital in developing federal guidelines for the safe processing of these shelf-stable snacks.

For more information, contact: Nisin tests - Dr. Catherine Cutter, 402-762-4100; Moisture limits - Dr. Kathleen Rajkowski, 215-233-6620.

Perdue Adds Two Titles to Nutrition Guide Series

Can large doses of Vitamin C help prevent the common cold? Does too much sugar cause diabetes?

These and other common misconceptions are cleared up in Perdue's new "Nutrition: Fiction & Fact."

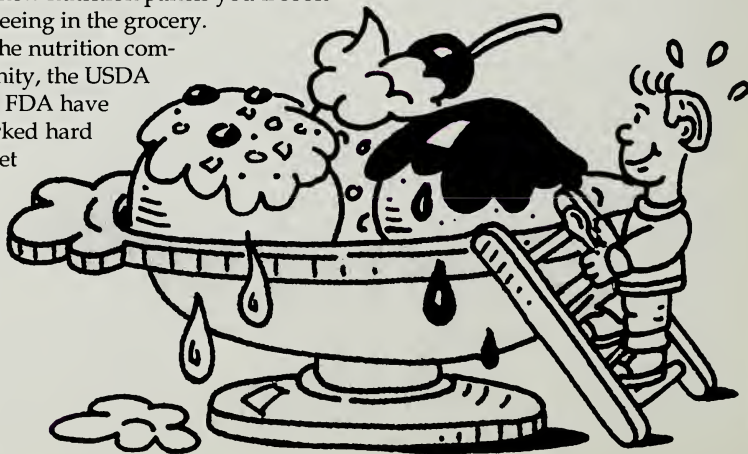
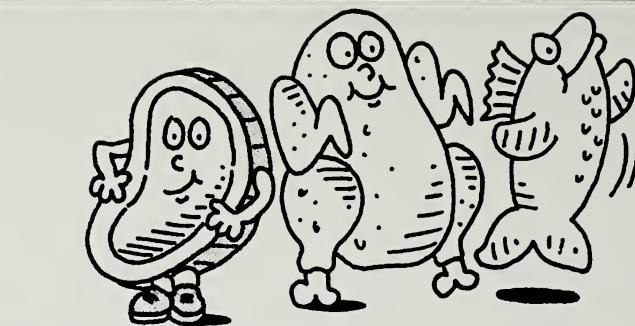
A second pamphlet, also new to the series, "Learning to Use the New Food Labels," is an excellent guide to the new nutrition panels you'll soon be seeing in the grocery.

The nutrition community, the USDA and FDA have worked hard to get

the new nutrition information on food packages. If properly interpreted, the new panels offer a good deal more information than the old. But they do presume people know which kinds of nutrients they need more of and which they should limit, and the mode of presentation is quite different. This pamphlet is a useful introduction.

The booklets are available from Perdue Guides, P.O. Box 2417W, Salisbury, Md. 21802.

-John Gibson



Hotline Headlines

by Linda Burkholder,
Hotline Database Manager

It was a sad day for one California family when the pet turkey fell asleep too close to the family car. He met an untimely end when the driver shifted into reverse. When the Meat and Poultry Hotline heard this tale—and the distraught caller asked if the dearly departed could at least be dressed and cooked—it was clear that the holiday season was in full swing.

The 1992 holiday season (November and December) was much busier than even veteran staff members expected. The Hotline got more than 66,000 calls, at all hours of the day and night. Food safety specialists talked to 11,250 people during business hours.

To keep pace with demand, the Hotline extended its November hours, as it has since 1987. Home economists were available 9 to 5 weekdays (instead of the usual 10 to 4). Holiday and weekend hours were added just before and on Thanksgiving day itself.

What did callers want to know?

Recurring Themes. As always, safe turkey preparation concerned most callers. Forty-five percent of the season's food safety queries pertained to turkey. This represents a substantial

portion—63 percent—of turkey questions for the whole year.

Early last November, turkey calls focused on storage. (Are turkeys frozen since last year still good? How long will poultry keep in the refrigerator? etc.) In mid-November, shoppers hit the stores and the emphasis shifted to safe preparation.

Some real turkey "predicaments" arose. Staff had to arbitrate family disputes. ("My sister left the turkey out all day long and I got sick, but she says I just ate too much.") Callers with already complicated travel plans wanted to arrive at their destination with the picture-perfect bird in hand.

But the job had its rewards, as when novice cooks called to thank the staff for helping them fix a safe and mouth-watering feast.

By the end of November, most of the turkey leftovers were gone or safely tucked in freezers. Callers then turned their attention to a wider variety of meat and poultry products, like standing rib roasts or roast duck served at year-end parties.

Other caller concerns were 1) safety of homemade and mail order food gifts, 2) food handling at community suppers, and, with the start of hunting season, 3) the storage, handling and safe preparation of venison.

Whole smoked turkeys and dried meats are the kinds of homemade foods that need careful handling and storage.

New in '92. The Hotline's automated message system allowed callers to select recorded food safety messages using a Touch-Tone phone. This service was a favorite with "night owl" callers. Even during business hours, callers who did not need a specialist's assistance used the system to get answers, saving them time and freeing the staff to handle other questions.

Over the past few years, smoking or grilling turkeys has become more popular among Hotline callers. So in 1992, we issued news features designed to help people do so safely.

On the horizon. More businesses are providing complete carry-out holiday meals for busy consumers today. The problem is that consumers are getting unsafe advice on cooling and reheating these prepared dishes and meals.

In 1993 we began working with industry groups to see how widespread this development is and to get safe food handling advice out there to commercial cooks and home customers. ❖

For more information on the Meat and Poultry Hotline, contact Susan Conley (202-690-0351). Consumers with food safety questions may call the Hotline at 800-535-4555; 202-720-3333 in the Washington, D.C. area.

COMING NEXT...

In the Winter Issue

The WHYS behind the new Safe Handling labels



A 4-page supplement on why safe handling is vital in the preparation of meat, poultry and other perishable foods.

- A FIRST—A *Food News* photo guide to the new meat thermometers & why you should have one.
- Try a Byte...A listing of electronic bulletin board (BBS) and computer internet systems to lock you into the latest food safety and nutrition data.

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